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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/053,365 | 10/26/2001 | Steven B. Dawes | SP01-277/9272-8 | 2877 |

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| EXAMINER | |
|---|---|
| HOFFMANN, JOHN M | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1731 | |

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/053,365 | DAWES ET AL. | |
| | Examiner | Art Unit | |
| | John Hoffmann | 1731 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *28 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14,16-24 and 27-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,11-14,16-24 and 27-56* is/are rejected.

7)☒ Claim(s) *6-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 March 2005 has been entered.

### *Claim Objections*

Claims 6-10 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s).

Claim 1 (in light of the definitions in the specification) requires that the doping atmosphere be provided into the vessel during the pulse (i.e. before the reaction time). But claim 10 requires that "the dopant gas" is not added to the atmospheres until after the pulse. In other words, for claim 10 to be accurate, the pulse would require a pre-first doping atmosphere. Then when it is in the vessel and the dopant gas added, then the it would be a first doping gas atmosphere which includes a dopant gas. Thus claim 10 does not further limit claim 1, it takes changes the scope to something that is mutually exclusive of claim 1.

Claim 6 requires the pressure staying constant through both reacting times, which means that the vessel stays substantially constantly filled. However claim 1 requires that the vessel be partially evacuated and refilled – thus it has to be made at least partially empty. Thus claim 6 changes the scope from one which the vessel is emptied (at least partially) to one that is never empty. These are mutally exclusive scopes. Claim 6 does not limit claim 1 – it takes it to a completely new scope.

Claims 6-10 are not further treated on their merits;

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5, 11-14, 16-24, and 27-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 51 first requires forming the doping atmosphere in the vessel, then later requires flowing the doping atmosphere into the vessel. There is no support for this recirculation of the doping atmosphere.

Examiner could find no support for a pulse that has a flow through the vessel during the first reacting time as now required by claim 1. First, page 11 of the specification defines "pulsing"; Applicant is limited to that definition – it requires that the pulsing is what happens prior to the reaction time. However claim 1 now requires a that the "pulse comprises a flow which is...(interrupted/reduced) ...during the first reaction time." Alternatively and/or additionally, there is no support of a pulse that comprises a flow of a doping atmosphere... as claimed.

Still further there is no support for the flow "through the vessel" that is fully or substantially reduced during the first reaction time/ holding. Page 12, lines 17-19 of the specification limits what is meant by "hold" to having substantially no flow out of the vessel. And thus, nothing can go through the vessel.

Looking at it differently: the claim seems to be directed to both holding and pulsing. But there does not appear to be any explicit support for this combination (and as per the definitions such seems impossible). Most notably – the specification defines/limits pulsing to the "process gas". There is no support for pulsing only the doping atmosphere.

This all applies to claims 30 and 51 as well.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 11-14, 16-24, and 27-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18: there is confusing antecedent basis for "the reacting time" – it is unclear if it is the second, first or both. The same for "the doping atmosphere".

Page 12, lines 17-19 of the specification sets for a definition for hold/held. But the lines 20-22 perhaps further define the term – perhaps not. Perhaps the line 22 "most preferably, the leakage rate is substantially 0 slpm" is merely a reiteration of lines 17-18: "substantially no flow". And to the degree that lines 20-22 was to serve as a definition, one could not tell if it were to be 0.5, 0.1 or 0 slm. Still further, see the 112-1st rejection which now indicates that the one need only have substantial reduction in flow when holding. For these reasons it is deemed that one of ordinary skill would not be able to ascertain how much of a flow (if any) could read on the claim, and how much would not.

The specification must clearly set forth the definition explicitly and with reasonable clarity, deliberateness and precision. *Teleflex Inc. v. Ficosa North America Corp.*, 63 USPQ2d 1374, 1381 (fed. Cir. 2002), *Rexnord Corp. v. Laitram Corp.* 60 USPQ2d 1851, 1854 (fed. Cir. 2001) and MPEP 2111.01.

As discussed above, the specification defines "pulsing" as something that occurs prior to the first reacting time. But Claim 1 reasonably suggests that the pulse occurs at least during part of the first reacting time. Since these two things appear to contradict each other, one would not be able to understand these claims.

Claims 30 and 51 are indefinite for the same reasons claim 1 is.

Claim 51 is not understood, Lines 3-4 requires that the doping atmosphere is formed in the vessel – but line 9 requires that the doping atmosphere flows into the vessel.

Claim 52: there is no antecedent basis for "the flow rate" – both occurrences. Namely, it is unclear if it would be any flow rate, the average flowrate or what. Clearly as a vessel is pressurized, the flow rate would change due to a change in there pressure gradient. Also the language "is less the flow rate": it is unclear if such is a subtraction, or if it means "is less than the flow rate".

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5, 11-14, 16-24, and 27-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuta 6499317.

See col. 13, lines 25-37 discloses the pulsed doping substantially as claimed. However Ikuta does not explicitly say that there is evacuating step as claimed. But col. 13, line 23 substantially supplies this lack; it says that the process can have more fluorine doping. There is no indication as to how do the "more" doping. It would have been obvious to do more doping by repeating the same "fluorine doping" described at col. 13, lines 25-37.

IN as much it is obvious to duplicate parts (see below), it is deemed duplication of steps is obvious, especially when the reference teaches more of the same result (i.e. more doping)

**From MPEP 2144.04**

B. Duplication of Parts
In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies ** in the joint, and a plurality of "ribs" ** >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.).

Performing the Ikuta fluorine doping twice would result in the two pulsings of SiF4. Namely providing the pulse/atmosphere, holding at the normal pressure for a predetermined time to dope, reducing the pressure (i.e. evacuating) to 1 Torr again, refilling with SiF4, and holding again.

As to the preamble – it is deemed the waveguide preform is just an intended use.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claim 2: It would have been obvious to repeat the fluorine doping any number of times, depending upon how much fluorine doping is desired – since it is clear from Ikuta that one doping may not be enough, one can always repeat until the level is sufficient.

Claims 3 and 4 it is deemed the bringing to normal pressure constitutes pressurizing. Alternatively see col.11, line 18. This applies to claim 16 also.

Claim 5: it would have been obvious to seal the chamber – because if there was a leak, then the gas couldn't dope the glass.

Claims 11-12: Examiner takes Official Notice that it is well known to maintain the physical integrity pressurized furnace chambers by using sleeves and/or pressurized surroundings because heat tends to reduce the strength of furnace materials and pressure tends to make things explode, destroy things and hurt people.

Claim 13: Examiner takes Official Notice that it is well known to rotate optical fiber preforms when heating them, so as to equilibrate the heat – so that heat is uniformly applied. If heat is not uniformly applied, the final product is not likely to be uniform.

Claim 14: it is deemed that various steps that occur before the providing step would serve to dehydrate the glass, for example see col. 17, example 1 (heating to 500

C in a vacuum) or the chloride treatment of col. 13, lines 1-5. The sintering is clearly disclosed.

Claim 17: Ikuta does not disclose using different pressures. Examiner takes Official notice that it is well known that pressure is related to dopant concentration. The higher the dopant pressure, the higher the dopant concentration in the gas (as per the ideal gas law, PV=nRT). And the higher the concentration in the gas, the higher steeper the concentration gradient, and thus more diffusion driving force (as per the Fick's diffusion laws). It would have been obvious to perform routine experimentation to determine the optimal pressures in the doping steps – depending upon the desired dopant profile.

Claim 18: it is deemed that before the gas reaches 10 atmosphere it had to be increased there from 1 atm first, then to 2 atm, and so forth.

Claims 19-21 See col. 11, line 18. It would have been obvious to perform routine experimentation to determine the optimal time depending upon what doping amount is desired. Alternatively, it would have been obvious to treat for 10 minutes, so as to save time and thus free the equipment to treat other preforms.

Claim 22: col 11, line 20.

Claim 23: it would have been obvious to perform routine experimentation to determine the optimal temperatures.

Claims 24, 27-28 are clearly met.

Claim 29: col 13, line 31.

Claims 30-37, 39-45, 47-50 are met for the reasons given above – claim 30 being substantially generic to claim 1.

Claim 38, 46: see example 5.

### *Allowable Subject Matter*

Although the prior art does not recognize the claim 51 process of forming the doping atmosphere in the vessel and then flowing it into the vessel, such is not deemed to be allowable subject matter because there does not seem to be support for such. However if Applicant can demonstrate that the filed claims comply with 35 USC 112 – 1st paragraph (see above rejection) then such would constitute allowable subject matter.

### *Response to Arguments*

It is argued that [0053] has support for the pulse. There is no paragraph in the present specification which is denoted as [0053]. Examiner could find no mention anywhere of any "pulse".

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohga, Moore, Tsuchiya, and Nicholson are cited as disclosing inventions that are substantially similar to one or more claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6-30-05

John Hoffmann
Primary Examiner
Art Unit 1731

jmh